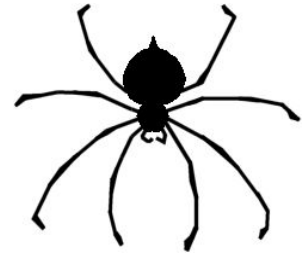


**Pyott-Boone Electronics**  
A FETTEROLF GROUP COMPANY



# QUALITY MANUAL

**Approved By:** *Nancy K Howell*  
Vice President

**Date:** Oct. 19, 2009

**Approved By:** *Paul A. Thy*  
General Manager

**Date:** Oct. 19, 2009

**Approved By:** *Dale Rasmussen*  
Quality Manager/ISO Rep.

**Date:** Oct. 19, 2009

***This Quality Manual sets forth the quality management system policies and defines compliance with the ISO 9001:2008 requirements.***

# Table of Contents

<b>INTRODUCTION</b>	<b>2</b>
<b>COMPANY OVERVIEW</b>	<b>2</b>
<b>SCOPE OF REGISTRATION</b>	<b>3</b>
<b>1 QUALITY POLICY</b>	<b>3</b>
<b>2 REFERENCES</b>	<b>3</b>
<b>3 DEFINITIONS/ACRONYMS</b>	<b>5</b>
<b>4 QUALITY MANAGEMENT SYSTEM</b>	<b>6</b>
4.1 GENERAL	6
4.2 DOCUMENTATION REQUIREMENTS	7
<b>5 MANAGEMENT RESPONSIBILITY</b>	<b>9</b>
5.1 MANAGEMENT COMMITMENT	9
5.2 CUSTOMER FOCUS	9
5.3 QUALITY POLICY	9
5.4 PLANNING	9
5.5 RESPONSIBILITY, AUTHORITY AND COMMUNICATION	10
5.6 MANAGEMENT REVIEW	11
<b>6 RESOURCE MANAGEMENT</b>	<b>12</b>
6.1 PROVISION OF RESOURCES	12
6.2 HUMAN RESOURCES	12
6.3 INFRASTRUCTURE	13
6.4 WORK ENVIRONMENT	13
<b>7 PRODUCT REALIZATION</b>	<b>13</b>
7.1 PLANNING OF PRODUCT REALIZATION	13
7.2 CUSTOMER RELATED PROCESSES	14
7.3 DESIGN AND DEVELOPMENT	15
7.4 PURCHASING	17
7.5 PRODUCTION AND SERVICE PROVISION	17
7.6 CONTROL OF MONITORING AND MEASURING EQUIPMENT	19
<b>8 MEASUREMENT, ANALYSIS AND IMPROVEMENT</b>	<b>19</b>
8.1 GENERAL	19
8.2 MONITORING AND MEASUREMENT	20
8.3 CONTROL OF NONCONFORMING PRODUCT	21
8.4 ANALYSIS OF DATA	21
8.5 IMPROVEMENT	22
<b>APPENDIX A: PYOTT-BOONE ELECTRONICS ORGANIZATIONAL CHART</b>	<b>23</b>
<b>APPENDIX B: QUALITY MANAGEMENT SYSTEM MAP</b>	<b>24</b>

## **INTRODUCTION**

This quality manual describes the policies and company-wide control system of the Pyott-Boone Electronics quality management system. The quality management system meets the requirements of the ISO 9001:2008 International Standard.

## **COMPANY OVERVIEW**

Pyott-Boone Electronics was established in 1972 to supply the coal mining industry with the most technologically advanced communication and monitoring systems available, and we are today an acknowledged leader in that industry.

In 1978 we embarked upon a broadened vista to diversify and serve other markets where our electronic manufacturing and quality capabilities could be effectively utilized. A very successful Electronic Contract Manufacturing segment of our business evolved. Since that time, we have gained the respect of many large defense contractors as we strive to produce the highest quality assemblies for the most technologically sophisticated products found anywhere in the world.

Pyott-Boone Electronics is not a large company. We are large in our accomplishments however. As a result of our dedicated and conscientious people, PBE has been nominated five times by three major defense companies for Outstanding Small Business Subcontractor of the Year. As a result of these nominations, PBE was selected in 1984 and 1990 as the Region III winner of the Small Business Subcontractor of the Year placing our company among the top ten in the nation. We have also been winners of six Awards of Excellence, and have won numerous quality awards from our customers including certified suppliers status. Additionally, we received the coveted Lockheed Martin Star Supplier Award in 2002 and again in 2007. In 2008, we received the Northrop Grumman World Class Supplier Award. Our company was one of 40 nominated to receive this prestigious award from among thousands of Northrop Grumman suppliers.

In the spring of 2000 Pyott-Boone Electronics expanded the scope of their products by acquiring Munro-Matix, Inc. Munro-Matix level indicators have been serving the construction, concrete, ready-mix, aggregate and grain industries for over 20 years. Additionally, Pyott-Boone has expanded its high quality gas monitoring line to the Coal bed Methane (CBM) and natural gas industries for connecting to pipelines of any size for monitoring the quality of the gas stream. Pyott-Boone continues to locate markets in which to expand our products and to design, market and produce new products to further diversify our company. In 2007 and 2008 and continuing in 2009, Pyott-Boone Electronics has actively pursued underground wireless communication and tracking solutions. Due to recent mine disasters, laws have been imposed to provide communication with and tracking of underground personnel in the event of a catastrophic event. Teaming with MineCom of Australia and design of our own tracking system, installations will be taking place during 2009 and beyond. This is the beginning of efforts to integrate other company's products accompanied by our own design implementation allowing better technology solutions for our customers.

Our philosophy of **QUALITY, DELIVERY, and ATTENTION TO DETAIL** remain the key ingredients to the continued success of our company. Our future portrays growth. We welcome challenges and opportunities. Ingenuity, consistent quality, competitive prices, fast and efficient delivery, competent service and sincerely dedicated personnel are our hallmarks.

## SCOPE OF REGISTRATION

This Quality Manual sets forth the quality management system policies and defines compliance with the ISO 9001:2008 requirements. Company wide registration will include the manufacture and design of proprietary communication and monitoring products for industry and electronic contract manufacturing services for defense, commercial and industry customers.

This manual is applicable to Pyott-Boone Electronics located at 1459 Wittens Mill Road North Tazewell Va. 24630

## 1 QUALITY POLICY

Pyott-Boone Electronics' management and employees are committed to providing quality products and services that meet or exceed our customers' requirements through ongoing continuous improvement to services, processes, product functionality, reliability and cost. Through total employee involvement and teamwork, Pyott-Boone is dedicated to company growth, which enhances customer satisfaction, creates jobs, provides opportunities for advancement, and improves employee self-esteem.

NOTE: The Quality Policy statement is documented in Pyott-Boone Electronics procedure 560P01.

## 2 REFERENCES

2.1 ISO 9001:2008 - Quality Management System – Requirements

2.2 Pyott-Boone Electronics Process Procedures:

- 423P01 - Quality System Document Control
- 423P02 - Engineering Document Control
- 423P03 - External Document Control
- 423P04 - Internal Product Literature Document Control
- 424P01 - Control of Quality Records
- 530P01 - Quality Policy and Objectives
- 560P01 - Management Review Procedure
- 620P01 - Training
- 630P01 - Maintenance Procedure
- 720P01 - Proposals Contract Manufacturing
- 720P02 - Proposals Proprietary
- 720P03 - Contract Review Proprietary
- 720P04 - Contract Review-Contract Manufacturing
- 720P05 - Contract Amendments
- 730P01 - Design Control
- 741P01 - Supplier Assessment
- 742P01 - Purchasing Procedure
- 743P01 - Receiving Inspection
- 750P01 - Production Scheduling
- 750P02 - Production Control
- 750P03 - Service and Repair
- 750P04 - Control of Proprietary Tooling
- 753P01 - Product ID and Traceability
- 754P01 - Customer Property - Consigned Material
- 754P02 - Customer Property Tooling & Equipment

- 755P01 - Packaging and Shipping
- 755P02 - Handling, Storage, and Preservation
- 760P01 - Calibration
- 821P01 - Customer Satisfaction
- 822P01 - Internal Quality Audits
- 823P01 - Assembly Area Process Audit
- 830P01 - Control of Non-Conforming Product
- 852P01 - Corrective Action Procedure
- 853P01 - Preventive Action

### 3 DEFINITIONS/ACRONYMS

**Conformity:** Fulfillment of a requirement

**Continual Improvement:** Recurring activity to increase the ability to fulfill quality requirements

**Contract:** An accepted order from the customer

**Contractor/Consultant:** Person that provides a Contract-defined service contributing to the success of Company objectives

**Controlled Document:** Any document requiring review and approval prior to release for use or reference

**Corrective Action:** Action to eliminate the cause of a detected nonconformity or other undesirable situation

**Customer:** An organization or person that receives a product. A customer can be internal or external to Pyott-Boone Electronics.

**Document:** information (meaningful data) and its supporting medium

Note 1 – the medium can be paper, magnetic, electronic, or optical computer disk, photograph, or master sample, or a combination thereof

Note 2 – A set of documents, for example specifications and records, is frequently called “documentation”.

**Management:** Vice Presidents; Directors; Managers and Supervisors

**Outsource Process:** A process that Pyott-Boone Electronics needs for its quality management system and which we have chosen to have performed by an external party.

**Preventive Action:** Action to eliminate the cause of a potential nonconformity or other undesirable potential situation

**Procedure:** Specified way to carry out an activity or process

**Process:** Set of interrelated or interacting activities which transforms inputs into outputs

**Process Owner:** Individual responsible for implementation of a process/procedure

**Product:** The result of a process (e.g., engineering documentation, product software, finished products, training, service). Pyott-Boone Electronics products constitute electro-mechanical communication and monitoring equipment utilized for monitoring and controlling of products and systems used in underground mining, cement facilities, quarries and other industry applications.

**Proposal:** Offer made by a supplier in response to an invitation to satisfy a contract award to provide product.

**Quality:** Degree to which a set of inherent characteristics fulfills requirements

**QMS:** Quality Management System

**Record:** Document stating results achieved or providing evidence of activities performed

Note 1 – records can be used, for example to document traceability and to provide evidence of verification, preventive action, and corrective action

Note 2 - generally records need not be under revision control

**Requirement:** A need, expectation, or obligation that is stated or implied by an organization, its customers, or other interested parties.

**Supplier:** An organization that provides a product or service to Pyott-Boone Electronics

**Top Management:** Vice President; General Manager; Operations Director/ISO Rep.; Operations Manager Proprietary; Information Systems Manager; Accounting Director/Controller; Personnel Manager; Engineering Manager and Engineering/Sales Director

**Validation:** Confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use are fulfilled. In design and development, validation concerns the process of examining a product to determine conformity with user needs and is typically performed on the final product under defined operating conditions. It may be necessary in earlier stages. Multiple validations may be carried out if there are different intended users.

**Verification:** Confirmation by examination and provision of objective evidence that specified requirements has been fulfilled. In design and development, verification concerns the process of examining the result of a given activity to determine conformity with the stated requirement for that activity.

## 4 Quality Management System

### 4.1 General

Pyott-Boone Electronics has established documented, implemented and is maintaining a quality management system and strives to continually improve its effectiveness in accordance with the requirements of ISO 9001:2008 International Standard.

Pyott-Boone Electronics has implemented its QMS by:

- a) Determining the processes needed for the quality management system and their application throughout the organization
- b) Determining the sequence and interaction of these processes
- c) Establishing criteria and methods required ensuring that both the operation and control of the defined processes are effective
- d) Applying resources and information necessary to support the operation and monitoring of these processes
- e) Auditing the QMS to monitor, measure, where applicable, and analyze the status of the processes as defined in 822P01 Internal Quality Audits
- f) Implementing the necessary actions to achieve planned results and continually improving those processes

Pyott-Boone Electronics manages these processes in accordance with the requirements of the ISO 9001:2008 International Standard.

**Refer to Appendix B, Quality Management System Map, for a pictorial view of the sequence and interactions of the Pyott-Boone Electronics processes.**

Where Pyott-Boone Electronics chooses to outsource any process that affects product conformity to requirements, Pyott-Boone Electronics ensures control over such processes. The type and extent of control to be applied to these outsourced processes is defined within the quality management system procedures and instructions.

Note 1: Processes needed for the quality management system referred to above include processes for management activities, provision of resources, product realization, measurement, analysis and improvement.

Note 2: Ensuring control over outsourced processes does not absolve Pyott-Boone Electronics of the responsibility of conformity to all customer, statutory and regulatory requirements. The type and extent of control to be applied to the outsourced process can be influenced by factors such as:

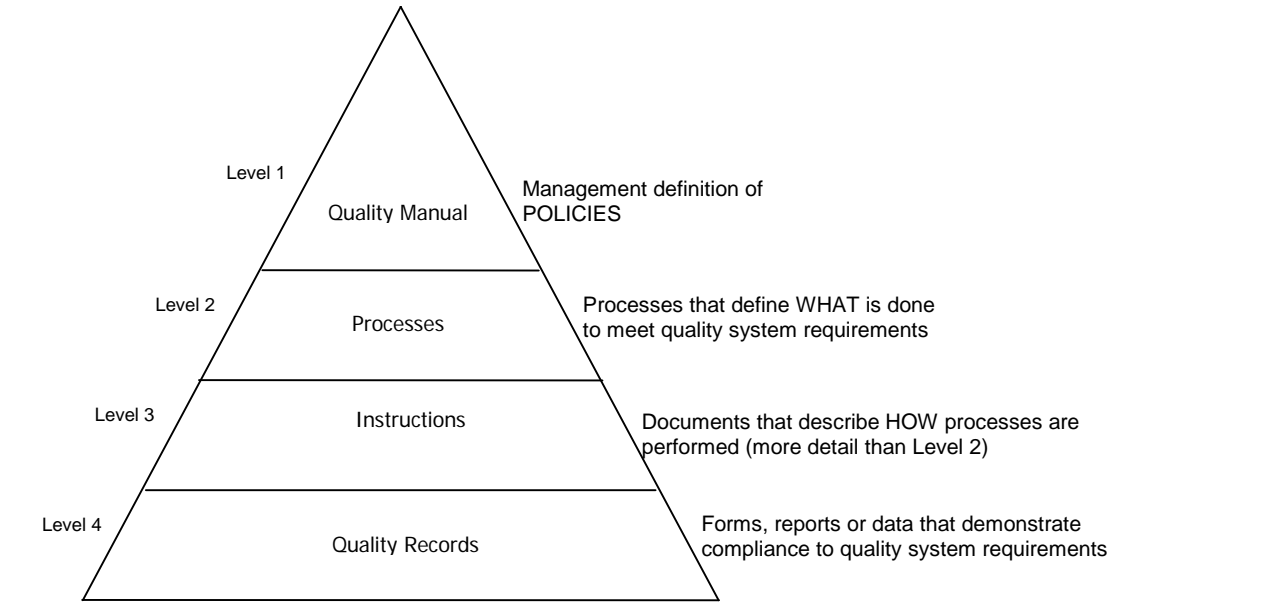
- a) The potential impact of the outsourced process on Pyott-Boone Electronics capability to provide product that conforms to requirements.
- b) The degree to which the control for the process is shared.
- c) The capability of achieving the necessary control through the application of 742P01 Purchasing Procedure.

## 4.2 Documentation Requirements

### 4.2.1 General

The Pyott-Boone Electronics quality management system adheres to the structure described in Fig. 1.

Figure 1 - Quality System Documentation Structure



#### Hierarchy of quality management system documents

- **Level 1:** Quality Manual that provides a general overview of the quality management system and defines the Quality Policy. The Quality Manual is divided into sections corresponding to each of the elements of the ISO 9001:2008 standard. The Quality Manual is accessible via the Company wide Intranet, which is the central repository for the latest approved version of all QMS documents.
- **Level 2:** Processes provide more detailed explanation of the quality management system elements and describe the structure of the quality management system. Associated documentation accessible via the Intranet are:
  - Corporate and Quality Objectives, Policies and Procedures
  - Quality System Procedures
  - Tables
- **Level 3:** Instructions provide more detailed, often step-by-step, instructions for executing activities. Associated documentation accessible via the Intranet or corporate directory are:
  - Forms/checklists
  - Standards/Guidelines
  - Templates
  - Work instructions
- **Level 4:** Quality Record documents or data contain the data, charts, checklists, or other records that demonstrate conformance to specified requirements and the effective operation of the quality management system.

## 4.2.2 Quality Manual

A quality manual is established and maintained that includes the following:

- a) The scope of the quality management system, including details of, and justification for, any exclusions.
- b) Reference to the documented procedures established for the quality management system;
- c) A description of the interaction between the processes of the quality management system as defined in each subsection of the Quality manual.

Quality Management controls the quality manual:

- Approved by the Vice President, General Manager and Operations Director/ISO Rep.
- Revision controlled by Quality System Document Control Procedure 423P01
- Distribution controlled by release on the Company Intranet
- Revision history maintained via Issue History and Approval Form
- Reviewed during Internal Quality System Audits and Management Review Meetings (as needed) and updated as necessary

## 4.2.3 Control of Documents

Level 1, 2, and 3 documents are controlled via established documented procedures (refer to Quality "System Document Control (423P01), Engineering Document Control (423P02), External Document Control, (423P03) and (423P04), Internal Product Literature Document Control. The documented procedures are established:

- a) To approve documents for adequacy prior to issue
- b) To review, update as necessary and re-approve documents
- c) To ensure that changes and the current revision status of documents are identified
- d) To ensure that relevant versions of applicable documents are available at points of use;
- e) To ensure that documents remain legible and readily identifiable
- f) To ensure that documents of external origin determined by the organization to be necessary for the planning and operation of the quality management system are identified and their distribution controlled and
- g) To prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose

Documents defined as quality records are controlled according to 4.2.4. If and when the need to control a Pyott-Boone Electronics document is in question, Quality Management must be consulted. Generally, if a change to the document affects the business activities at Pyott-Boone Electronics, it should be controlled.

Note: Old partially completed forms may be utilized until they are completed.

## 4.2.4 Control of Quality Records

Quality records are established to provide evidence of conformity to requirements and of the effective operation of the Quality Management System.

Quality records remain legible, readily identifiable and retrievable.

The Control of Quality Records procedure (424P01) has been established to define the controls for the identification, storage, protection, retrieval, retention and disposition of quality records. The generation of required Quality Records is defined in the related process documentation.

## **5 Management Responsibility**

### **5.1 Management Commitment**

Top management provides evidence of its commitment to the development and implementation of the quality management system and continually improving its effectiveness by:

- a) Communicating to the organization the importance of meeting customer as well as regulatory and legal requirements (i.e. management provides employee training, conducts staff meetings and conducts periodic company meetings with all employees)
- b) Establishing the Quality Policy
- c) Maintaining and monitoring the established Quality Objectives
- d) Conducting management reviews
- e) Ensuring the availability of resources

Top management (to include department managers) establishes and maintains a Vision/Mission Statement, and maintains yearly departmental and company objectives via strategic planning activities. The financial budget is not to be audited.

### **5.2 Customer Focus**

Top management ensures that customer requirements are determined and fulfilled with the aim of enhancing customer satisfaction.

Inputs into the Design Control process may include customer needs and desires as related to the product. (Refer to 7.2.1). Customer satisfaction is included in section 8.2.1.

### **5.3 Quality Policy**

Top management ensures that the Quality Policy:

- a) Is appropriate to the purpose of the organization
- b) Includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system
- c) Provides a framework for establishing and reviewing Quality Objectives
- d) Is communicated and understood within the organization
- e) Is reviewed for continuing suitability

Refer to Section 1.

### **5.4 Planning**

#### **5.4.1 Quality Objectives**

Top management ensures that Quality Objectives are established at relevant functions and levels within the organization. The Quality Objectives are measurable and consistent with the Quality Policy. Quality Objectives include those needed to meet requirements for product. These objectives can be found in 530P01, Quality Policy and Objectives.

Company level Quality Objectives are established, documented, and issued via the Quality Manual. Quality Objectives performance is reviewed at the Management Review Meeting. Quality Objectives and related performance is communicated to personnel throughout the organization as appropriate.

## **5.4.2 Quality Management System Planning**

Top management ensures that

- The planning of the quality management system is carried out in order to meet:
  - The requirements as specified in Section 4.1 of the ISO 9001:2008 Standard
  - The Quality Objectives
  - Business needs
- The integrity of the quality management system is maintained when changes to the quality management system are planned and implemented.

## **5.5 Responsibility, Authority and Communication**

### **5.5.1 Responsibility and Authority**

Responsibilities, authorities and their interrelations are defined by Management and are documented in the Organization Chart (Appendix A), and in the various Procedures and Instructions. All documents are communicated throughout the organization as appropriate.

#### Vice President

Has overall responsibility for the definition of and adherence to the Quality Policy. The General Manager is responsible, through the Management Representative, for the authorization and implementation of the quality management system throughout Pyott-Boone Electronics, including:

- Formulating the Quality Policy
- Establishing Quality Objectives and monitoring progress to ensure continued suitability and effectiveness of the quality management system
- Providing the necessary resources to maintain the quality management system
- Directing and auditing quality-related activities; reporting to and advising the management staff on quality matters
- Leading and initiating actions to prevent the occurrence of any nonconformities relating to product, process, and quality management system
- Ensuring the quality management system is maintained through appropriate audits, tests, inspections, and surveys
- Reviewing organizational requirements and providing recommendations for changes
- Reporting quality and nonconformity data and trends
- Identifying resources to maintain the quality management system
- Continually improving the quality management system
- Co-chairing management reviews of the quality management system

#### Directors, Managers and Supervisors

- Actively support those responsible for implementation and improvement of the quality management system

- Ensure this Quality Policy is fully supported, understood, implemented, and maintained at appropriate levels of their organizations
- Ensure appropriate supporting procedures are documented and followed throughout their respective departments
- Ensure adequate resources and prioritization; assign trained personnel for performing work and verification activities, including internal audits, and work affecting product quality
- When appointing a designee to act on their behalf for the purposes of any element of this Quality Policy, ensure the person appointed is adequately trained and given sufficient organizational freedom and authority to execute the responsibility
- Continually improve the quality management system

### Employees

- Understand and support the Quality Policy and the appropriate elements of the quality management system for their areas of work
- Dedicate their efforts to the reduction, elimination and prevention of quality deficiencies
- Initiate action to prevent the occurrence of nonconformities related to product, process, and quality management system
- Continually improve the quality management system

## **5.5.2 Management Representative**

Top Management has appointed the Operations Director/ISO Rep. as the Management Representative and the General Manager as Deputy Management Representative. Irrespective of other responsibilities the Management Representative has the responsibility and authority that includes:

- a) Ensuring that processes of the quality management system are established, implemented and maintained
- b) Reporting to top management on the performance of the quality management system, including needs for improvement
- c) Ensuring the promotion of awareness of customer requirements throughout the organization

## **5.5.3 Internal Communication**

Top management ensures that appropriate communication processes are established within the organization and that communication takes place regarding the effectiveness of the quality management system.

Primary internal communication is initiated at Management Staff meetings and is communicated throughout the organization by the managers and supervisors. This includes the results of the evaluation of the effectiveness of the quality management system as determined at the Management Review Meetings. Other methods of internal communication include bulletin boards and company meetings.

## **5.6 Management Review**

### **5.6.1 General**

Top management reviews the quality management system, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness. This review includes assessing opportunities for improvement and the need for changes to the quality management system, including the Quality Policy and Quality Objectives.

Records of the management reviews are maintained. The management review process is documented in 560P01 Management Review Procedure.

## 5.6.2 Review Input

An agenda (560R01, Management Review Agenda & Minutes) is generated for Management Review with inputs including information on:

- a) Results of audits
- b) Customer feedback
- c) Process performance and product conformance
- d) Status of preventive and corrective actions
- e) Follow-up actions from previous management reviews
- f) Planned changes that could affect the quality management system
- g) Recommendations for improvement

## 5.6.3 Review Output

The output from the management review includes decisions and actions related to:

- a) Improvement of the effectiveness of the quality management system and its processes
- b) Improvement of product related to customer requirements
- c) Resource needs

Results of Management Review meetings are maintained. (See Management Review Agenda & Minutes, 560R01)

# 6 Resource Management

## 6.1 Provision of Resources

Management determines and provides the resources needed.

- a) To implement and maintain the quality management system and continually improve its effectiveness
- b) To enhance customer satisfaction by meeting customer requirements

Resource planning and decisions are made during Management Review Meetings, Engineering/Sales Meetings and Pre-Production Meetings. Detailed resource requirements for specific projects are defined in the various engineering project plans.

## 6.2 Human Resources

### 6.2.1 Assignment of Personnel

Personnel performing work affecting conformity to product requirements are competent on the basis of appropriate education, training, skills and experience.

### 6.2.2 Competence, Training and Awareness

Pyott-Boone Electronics:

- a) Determines the necessary competence for personnel performing work affecting conformity to product requirements,
- b) Where applicable, provide training or take other actions to achieve the necessary competence.
- c) Evaluates the effectiveness of the actions taken
- d) Ensures the employees are aware of the relevance and importance of their activities and how they contribute to the achievement of the Quality Objectives
- e) Maintains appropriate records of education, training, skills and experience

Refer to 620P01 Training Procedure

### **6.3 Infrastructure**

Pyott-Boone Electronics provides and maintains the infrastructure it needs to achieve the conformity of product requirements. This includes:

- Pyott-Boone Electronics Operations Manager-Proprietary is responsible for:
  - Buildings, workspace and associated facilities
  - Supporting services (e.g. janitorial, utilities)
- Pyott-Boone Electronics Accounting Director/Controller is responsible for:
  - Communications maintenance
- Pyott-Boone Electronics Manager Information Systems is responsible for:
  - Intranet/network including maintenance and security
- Pyott-Boone Electronics applicable Manager is responsible for:
  - Assigned vehicles

Refer to 630P01 Maintenance Procedure.

### **6.4 Work Environment**

The Operations Manager-Proprietary is responsible for maintaining the work environment.

## **7 Product Realization**

### **7.1 Planning of Product Realization**

Pyott-Boone Electronics' planning of product realization is consistent with the requirements of the other processes of the quality management system.

Product realization is that sequence of processes and sub-processes required to achieve the product.

In planning product realization, the organization determines the following, as appropriate:

- a) Quality Objectives and requirements for the product
- b) The need to establish processes and documents, and to provide resources specific to the product
- c) Required verification, validation, monitoring, measurement, inspection and test activities specific to the product and the criteria for product acceptance
- d) The records needed to provide evidence that the realization processes and resulting product fulfill requirements.

The output of this planning is in a form based on the product/program.

## **7.2 Customer Related Processes**

### **7.2.1 Determination of Requirements Related to the Product**

Pyott-Boone Electronics follows the guidelines in 720P01, Proposals Contract Manufacturing; 720P02, Proposal Proprietary; 720P03, Contracts Review Proprietary; and 720P04, Contracts Review-Contracts Mfg. As appropriate to the situation, to determine:

- a) Requirements specified by the customer, including the requirements for delivery and post-delivery activities
- b) Requirements not stated by the customer but necessary for specified use or known and intended use
- c) Statutory and regulatory requirements applicable to the product
- d) Any additional requirements considered necessary by the organization

### **7.2.2 Review of Product Requirements**

Pyott-Boone Electronics reviews the requirements related to the product. This review is conducted prior to the commitment to supply a product to the customer and ensures that:

- a) Product requirements are defined.
- b) Contract or order requirements differing from those previously expressed are resolved.
- c) The organization has the ability to meet the defined requirements.

Records of results of the review and actions arising from the review are maintained. The following documents provide guidelines for conducting reviews and the records required:

- 720P01, Proposals Contract Manufacturing
- 720P02, Proposal Proprietary
- 720P03, Contracts Review Proprietary
- 720P04, Contracts Review-Contracts Mfg.

Where the customer provides no documented statement of requirement, the customer requirements are confirmed by Pyott-Boone Electronics before acceptance.

Where product requirements are changed, Pyott-Boone Electronics ensures that relevant documents are amended and that relevant personnel are made aware of the changed requirements. Changes are made following the guidelines of 720P05, Contract Amendments.

### **7.2.3 Customer Communication**

Pyott-Boone Electronics establishes the appropriate mechanism for communicating with customers based on the

program requirements and the program's relationship to:

- a) Product information
- b) Inquiries, contracts or order handling, including amendments
- c) Customer feedback, including customer complaints

## **7.3 Design and Development**

### **7.3.1 Design and Development Planning**

Pyott-Boone Electronics follows the guidelines in 730P01 Design Control for planning and controlling design and development of product including:

- a) The design and development stages
- b) The review, verification and validation that are appropriate to each design and development stage
- c) The responsibilities and authorities for design and development

Interfaces between different groups involved in design and development are managed to ensure effective communication and clear assignment of responsibility.

Planning output is updated, as appropriate, as the design and development progresses.

### **7.3.2 Design and Development Inputs**

Inputs relating to product requirements are determined and records identified in the Design Requirements Document, 730R01. These include:

- a) Functional and performance requirements
- b) Applicable statutory and regulatory requirements
- c) Where applicable, information derived from previous similar designs
- d) Other requirements essential for design and development

The inputs are reviewed for adequacy. Requirements must be complete, unambiguous and not in conflict with each other.

### **7.3.3 Design and Development Outputs**

The outputs of the design and development are in a form suitable for verification against the design and development input and is approved prior to release.

Design and development outputs:

- a) Meet the input requirements for design and development
- b) Provide appropriate information for purchasing, production and service operations
- c) Contain or references product acceptance criteria
- d) Specify the characteristics of the product that are essential for its safe and proper use

The design outputs are determined by the associated project plan based on the stage of design, the product and as required by the customer.

### **7.3.4 Design and Development Review**

At suitable stages, systematic reviews of design and development are conducted to:

- a) Evaluate the ability of the results to fulfill requirements
- b) Identify any problems and propose necessary actions

Participants in such reviews include representatives of functions concerned with the design and development stage(s) being reviewed. Records of the results of the reviews and any necessary actions are maintained. The type of review and record requirements are described in the associated project plan. As a minimum, 730R03 is maintained as design review records.

### **7.3.5 Design and Development Verification**

Verification is performed in accordance with the project plan to ensure that the design and development outputs have satisfied the design and development input requirements. Records of the results of the verification and any necessary actions are maintained.

### **7.3.6 Design and Development Validation**

Design and development validation is performed in accordance with the project plan to ensure that resulting product is capable of fulfilling the requirements for the specified or known intended use or application. Wherever practicable, validation is completed prior to the delivery or implementation of the product. Records of the results of validation are maintained as required by the project plan.

### **7.3.7 Control of Design and Development Changes**

Design and development changes are controlled in accordance with 423P02, Engineering Document Control. The changes are reviewed, verified and validated, as appropriate, and approved before implementation.

The review of design and development changes includes evaluation of the effect of the changes on constituent parts and delivered product.

The ECO (Engineering Change Order) is utilized as the record of the results of the review of changes and any necessary actions are maintained.

## **7.4 Purchasing**

### **7.4.1 Purchasing Process**

Pyott-Boone Electronics ensures that purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product is dependent upon the effect of the purchased product on subsequent product realization or the final product.

Pyott-Boone Electronics evaluates and selects suppliers based on their ability to supply product in accordance with the organization's requirements. The Criteria for selection, evaluation and re-evaluation is established.

Records of the results of evaluations and any necessary actions arising from the evaluation are maintained as described in 741P01 Vendor Assessment.

### **7.4.2 Purchasing Information**

Purchasing information describes the product to be purchased, including where appropriate:

- a) Requirements for approval of product, procedures, processes and equipment
- b) Requirements for qualification of personnel
- c) Quality management system requirements

To ensure the adequacy of specified purchase requirements prior to their communication to the supplier the Purchasing Procedure 742P01 is followed.

### **7.4.3 Verification of Purchased Product**

The Receiving Inspection procedure, 743P01 provides the guidelines to ensure that purchased product meets specified purchase requirements.

Whether Pyott-Boone Electronics or its customer intends to perform verification at the supplier's premises, the organization states the intended verification arrangements and method of product release in the purchasing information.

## **7.5 Production and Service Provision**

### **7.5.1 Control of Production and Service Provision**

Pyott-Boone Electronics carries out production and service under controlled conditions. Control is described by Production Scheduling, 750P01, Production Control, 750P02, and the various Level III documents referenced, such as travelers, manufacturing instructions, pick list, and In-house inspection work instructions.

These instructions, as applicable to the product and/or process, describe when and how:

- a) Information that describes the characteristics of the product is required and available.
- b) Work instructions are needed.
- c) Suitable equipment is used.
- d) Appropriate monitoring and measuring equipment are utilized.
- e) Monitoring and measurement of the product or process is performed.

- f) Implementation of product release, delivery and post-delivery activities.

Release of product during production activities is controlled utilizing the traveler. Release, delivery and post-delivery activities are described in 755P01, Packing and Shipping, and 750P03, Service Repair. Control of Proprietary Tooling and Equipment is controlled by 750P04.

### **7.5.2 Validation of Processes**

Pyott-Boone Electronics validates production and service processes where the resulting output cannot be verified by subsequent measurement or monitoring and, as a consequence, deficiencies become apparent only after the product is in use or the service has been delivered. Related mechanisms used are IPIs (In-Process Inspections) that verify an operation that cannot be validated at the final assembly level and/or required inspection checks prior to the next step (example: hidden solder joints, coating, etc.) and in process audits to validate the process integrity (example: pull test for crimp connections, cleaning, calibration, etc).

Validation demonstrates the ability of the processes to achieve planned results.

The organization defines arrangements for validation that includes the following, as applicable to the process:

- a) Defined criteria for review and approval of the processes
- b) Approval of equipment and qualification of personnel
- c) Use of defined methodologies and procedures
- d) Requirements for records
- e) Revalidation

### **7.5.3 Identification and Traceability**

Pyott-Boone Electronics identifies, where appropriate, the product by suitable means throughout product realization.

The organization controls and records the unique identification of the product where traceability is a requirement. Refer to 753P01 Product ID and Traceability for details.

### **7.5.4 Customer Property**

Pyott-Boone Electronics normally handles customer supplied material, tooling and equipment based on contract. Refer to Customer property – Consigned Material, 754P01, and Customer Property – Tooling and Equipment, 754P02.

When the situations exist which the above referenced processes do not apply, Pyott-Boone Electronics will protect customer property under Pyott-Boone Electronics' control or use with the same degree of care it uses to protect its own property, which measures are, at a minimum, a reasonable degree of care or the level of care required under an agreement between the parties. Customer property may include intellectual property and confidential and proprietary business information. Pyott-Boone Electronics uses standard reasonable business procedures to identify, verify, protect and safeguard customer property including customer property provided for use or incorporation in the product. If any customer property is discovered lost, damaged, defective or otherwise found to be unsuitable for use, such discovery is, as applicable, recorded and reported to the customer via phone, e-mail or other form of correspondence, and within a reasonable amount of time following such discovery. At such point in time, the parties initiate a resolution or disposition of the property at issue.

## 7.5.5 Preservation of Product

Pyott-Boone Electronics preserves conformity of product during internal processing and delivery to the intended destination. This includes identification, handling, packaging, storage and protection. This preservation also applies to constituent parts of a product.

Various processes provide control including:

- Production Control, 750P02
- Packing and Shipping, 755P01
- Handling, Storage, & Preservation, 755P02
- The various Level III documents referenced, such as travelers, manufacturing instructions, pick list, and In-house inspection work instructions

## 7.6 Control of Monitoring and Measuring Equipment

Pyott-Boone Electronics determines the monitoring and measurement to be undertaken and the monitoring and measuring equipment required to provide evidence of conformity of product to determined requirements.

Processes are established to ensure that monitoring and measurement can be and are carried out in a manner that is consistent with the monitoring and measurement requirements. (Refer to Calibration, 760P01)

Where necessary to ensure valid results, measuring equipment is:

- a) Calibrated or verified, or both, at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification is recorded;
- b) Adjusted or re-adjusted as necessary;
- c) Have identification in order to determine calibration status;
- d) Safeguarded from adjustments that would invalidate the measurement result;
- e) Protected from damage and deterioration during handling, maintenance and storage.

The validity of previous measuring results when the equipment is found not to conform to requirements is assessed and recorded. Appropriate action is taken on the equipment and any product affected.

Records of the results of calibration and verification are maintained.

When used in the monitoring and measurement of specified requirements, the ability of computer software to satisfy the intended application is confirmed. This confirmation is undertaken prior to initial use and is reconfirmed as necessary.

## 8 Measurement, Analysis and Improvement

### 8.1 General

Pyott-Boone Electronics plans and implements the monitoring, measurement, analysis and improvement processes needed

- To demonstrate conformity to product requirements,
- To ensure conformity of the quality management system, and
- To continually improve the effectiveness of the quality management system

This includes determination of applicable methods, including statistical techniques, and the extent of their use. Metrics may be identified as a requirement in project plans, various inspection instructions, and/or as requested by Management.

## **8.2 Monitoring and Measurement**

### **8.2.1 Customer Satisfaction**

As one of the measurements of the performance of the quality management system, the Pyott-Boone Electronics monitors information relating to customer perception as to whether customer requirements have been fulfilled.

Pyott-Boone Electronics utilizes a combination of the following methods for obtaining customer satisfaction data:

- Results of customer surveys
- Customer complaints
- Informal and formal customer feedback

Refer to the Customer Satisfaction procedure, 821P01.

### **8.2.2 Internal Audit**

Pyott-Boone Electronics conducts internal audits at planned intervals to determine whether the quality management system:

- a) Conforms to the planned arrangements per 7.1 of this Quality Manual, to the requirements of the ISO 9001:2008 International Standard and to the quality management system requirements established by the organization, and
- b) Is effectively implemented and maintained.

Pyott-Boone Electronics plans the audit program taking into consideration the status and importance of the processes and areas to be audited as well as the results of previous audits. The audit criteria, scope, frequency and methods are defined. Auditors are selected and audits are conducted to ensure objectivity and impartiality of the audit process. Auditors do not audit their own work. Pyott-Boone Electronics allows the use of outside agencies to conduct and/or assist with Internal Audits as determined by Management.

The Internal Quality Audits procedure, 822P01, includes the responsibilities and requirements for planning and conducting audits, and for recording results and maintaining records.

Management responsible for the area being audited ensures that any necessary correction and corrective actions are taken without undue delay to eliminate detected nonconformities and their causes. Follow-up activities in accordance with the Corrective Action procedure 852P01 include verification of the actions taken and the reporting of verification results.

### **8.2.3 Monitoring and Measurement of Processes**

The Pyott-Boone Electronics follows 823P01, Assembly Area Process Audit for monitoring the major production areas. Internal audits, as described in section 8.2.2, are the methodology used to monitor and measure all other quality management system processes. These methods demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, correction and corrective action is taken, as appropriate.

## 8.2.4 Monitoring and Measurement of Product

Pyott-Boone Electronics monitors and measures the characteristics of the product to verify that requirements for the product are fulfilled. This is carried out at appropriate stages of the product realization process in accordance with the planned processes, procedures, and instructions.

Evidence of conformity with the acceptance criteria is documented. Records indicate the person(s) authorizing release of product. Control is described by Production Control, 750P02, and the various Level III documents referenced, such as travelers, manufacturing instructions, pick list, and In-house inspection work instructions.

Product release and service delivery do not proceed until all the specified activities have been satisfactorily completed, unless otherwise approved by a relevant authority, and where applicable by the customer. Release of product during production activities is controlled utilizing the traveler. Release, delivery and post-delivery activities are described in 755P01, Packing and Shipping, and 750P03, Service Repair.

## 8.3 Control of Nonconforming Product

When Pyott-Boone Electronics encounters product which does not conform to the product requirements it is controlled in accordance with Control of Non-Conforming Product, 830P01.

One or more of the following ways deals with Nonconforming product:

- By taking action to eliminate the detected nonconformity
- By authorizing its use, release or acceptance under concession by a relevant authority and, where applicable, by the customer
- By taking action to preclude its original intended use or application
- By taking action appropriate to the effects, or potential effects, of the nonconformity when nonconforming product is detected after delivery or use has started.

When nonconforming product is corrected, it is subject to re-verification to demonstrate conformity to the requirements.

Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, are maintained.

## 8.4 Analysis of Data

Pyott-Boone Electronics determines, collects and analyzes appropriate data to determine the suitability and effectiveness of the quality management system and to evaluate where continual improvement of the quality management system can be made. This includes data generated as a result of monitoring and measurement and from other relevant sources.

Pyott-Boone Electronics analyses data to the extent necessary as required by Management to provide information on (as a minimum):

- a) Customer satisfaction
- b) Conformance to product requirements
- c) Characteristics and trends of processes and products including opportunities for preventive action
- d) Suppliers

Refer to 560P01, Management Review.

## **8.5 Improvement**

### **8.5.1 Continual Improvement**

Pyott-Boone Electronics continually improves the effectiveness of the quality management system through the use of the Quality Policy, Quality Objectives, audit results, analysis of data, corrective and preventive actions and management review. Refer to 853P01 Preventive Actions/Continuous Improvement and 560P01 Management Review.

### **8.5.2 Corrective Action**

Pyott-Boone Electronics takes corrective action to eliminate the causes of nonconformities in order to prevent recurrence. Corrective actions are appropriate to the effects of the nonconformities encountered.

The Corrective Actions procedure 852P01 defines the requirements for:

- a) Reviewing nonconformities (including customer complaints)
- b) Determining the causes of nonconformity
- c) Evaluating the need for action to ensure that nonconformities do not recur
- d) Determining and implementing the action needed
- e) Recording of the results of action taken
- f) Reviewing the effectiveness of corrective action taken

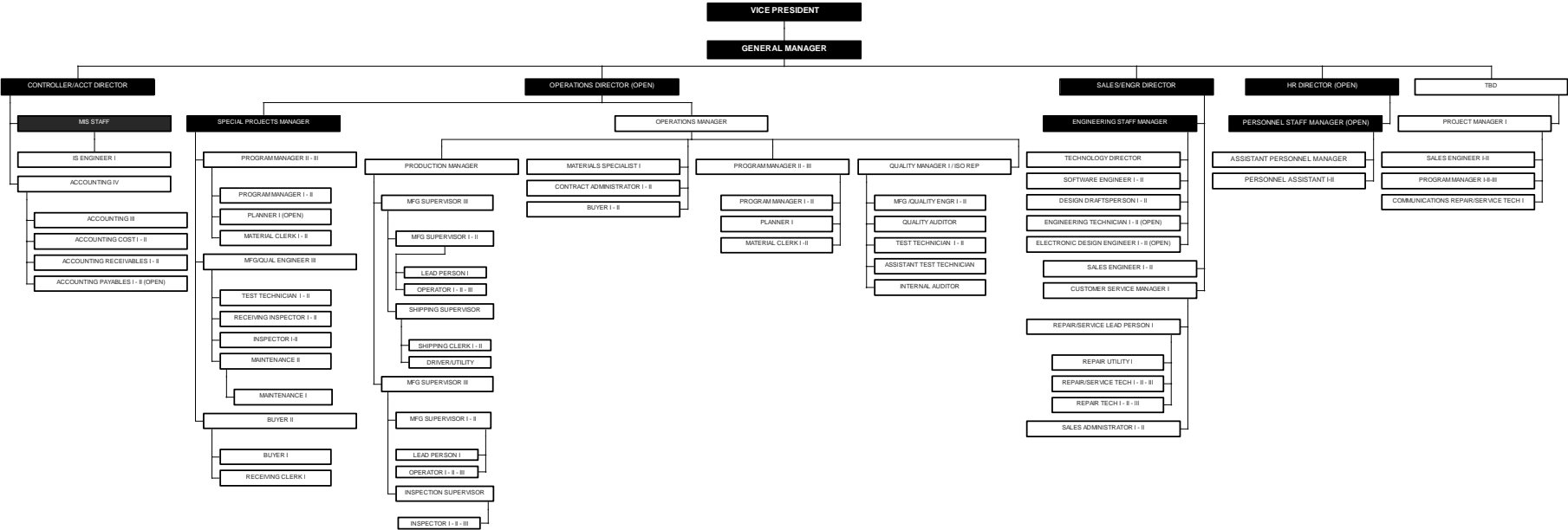
### **8.5.3 Preventive Action**

Pyott-Boone Electronics determines action taken to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive actions taken are appropriate to the effects of the potential problems.

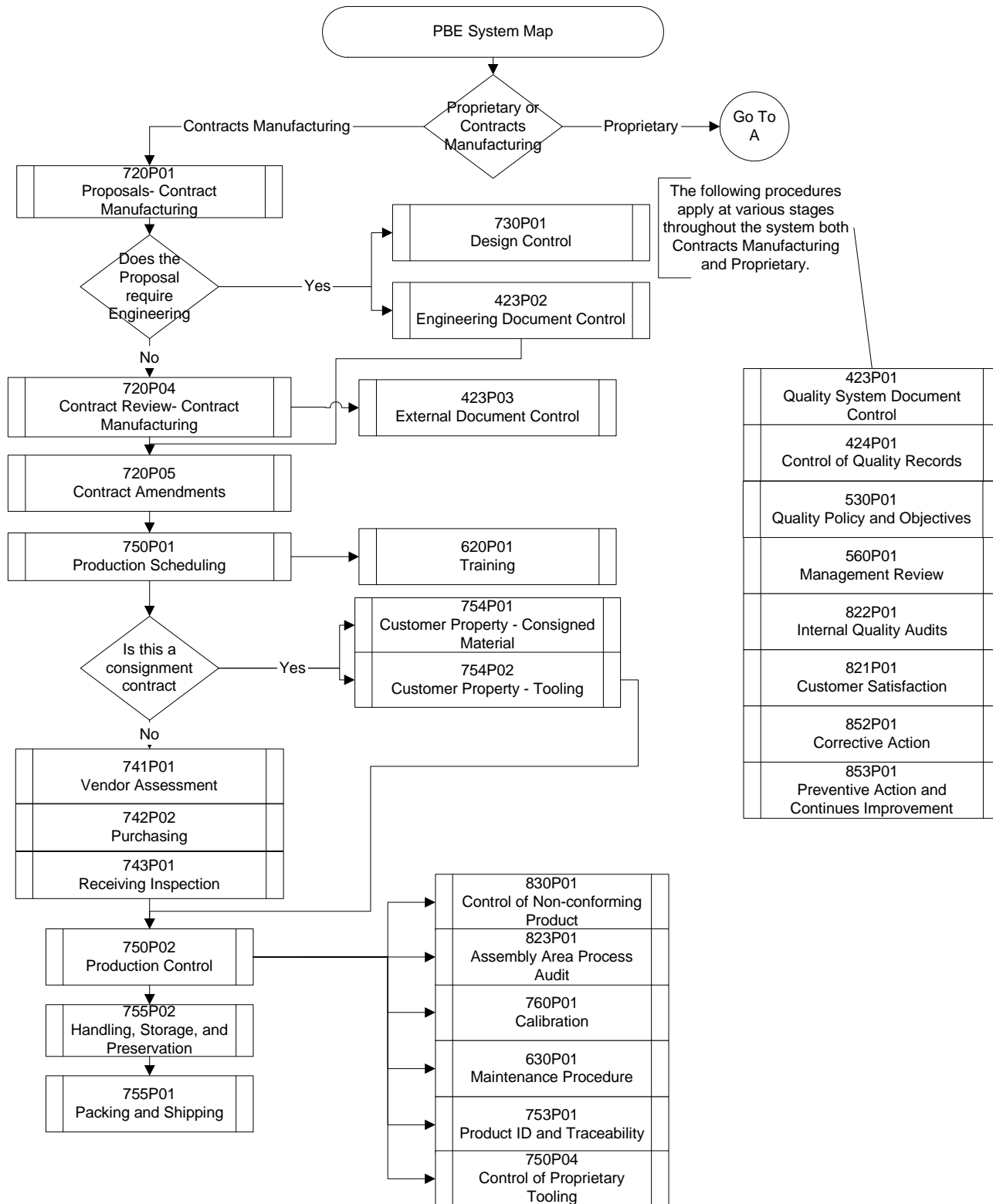
Preventive Actions/Continuous Improvement procedure 853P01 defines the requirements for:

- a) Determining potential nonconformities and their causes
- b) Evaluating the need for action to prevent occurrence of nonconformities
- c) Determining and implementing action needed
- d) Recording results of action taken
- e) Reviewing of effectiveness of preventive action taken

# Appendix A: Pyott-Boone Electronics Organizational Chart



## Appendix B: Quality Management System Map



**Appendix B (Cont.): Quality Management System Map**

